Abstract

A hybrid synchronous motor comprising a rotor and stators, wherein the stator has at least one assembly (7) having a structure in which ferromagnetic rings (2, 3) formed with cogs on the both inner and outer circumferences thereof, are arranged coaxially, and a coil winding (8) is wound on the assembly (7) so as to be positioned between cogs. The hybrid synchronous motor exhibits a high magnetic flux density in the air gap as the result of transverse magnetic flux of the permanent magnets combined with longitudinal magnetic flux of the coils and high active surface at the air gap due to double (inner and outer) air gaps. Further, since it contains only a single set of stator coils and it has merely a small number of assembling parts and conventional techniques of fabrication may be applied, the motor is cheap in construction. Furthermore, the motor exhibits an excellent energy efficiency due to only small ohmic losses in the coils.